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IS 9625 (1980): Locations of by-pass and drain connections for valves [MED 17: Chemical Engineering Plants and Related Equipment]

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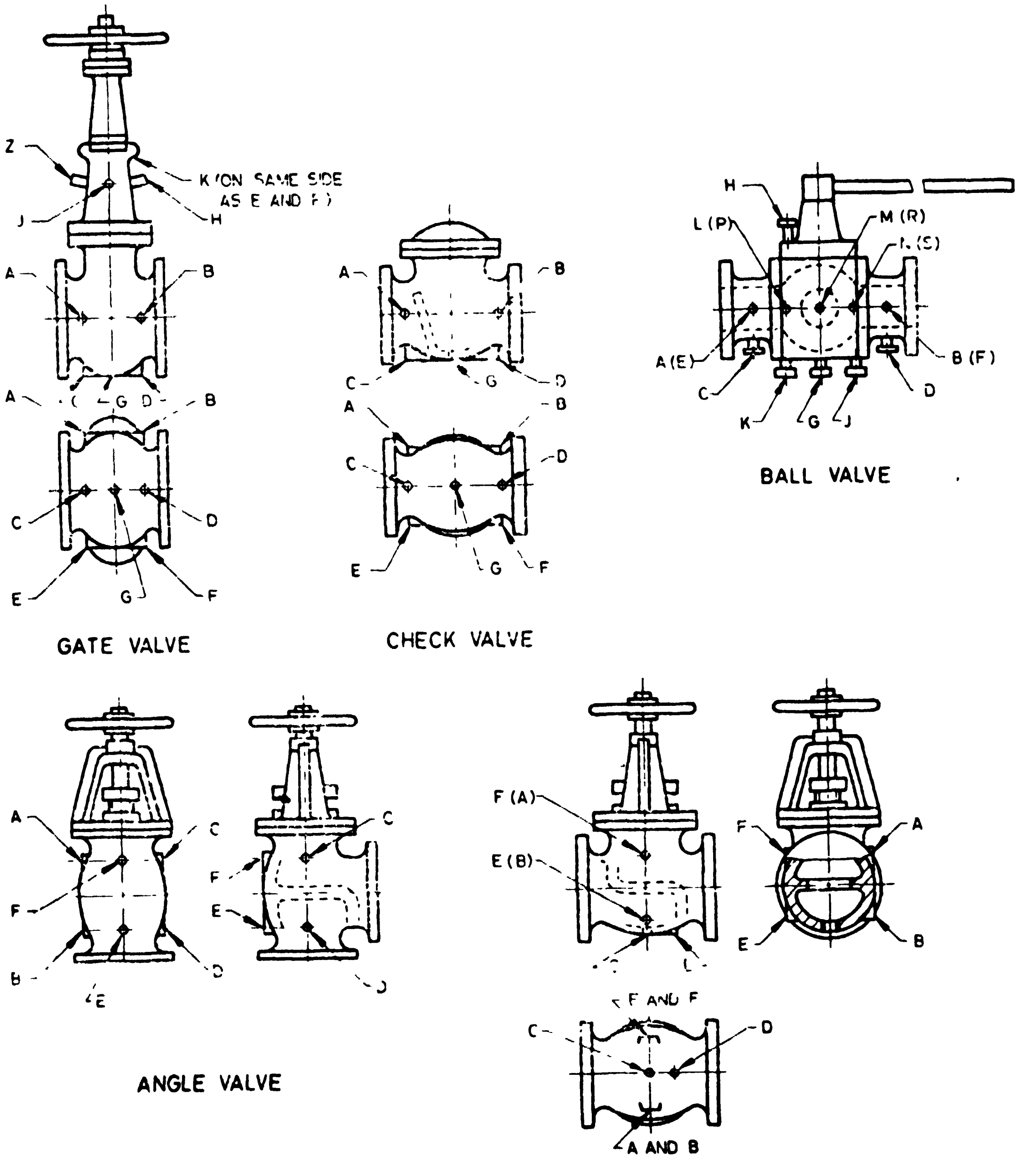
IS : 9625 - 1980
(Reaffirmed 1996)

Indian Standard

LOCATIONS OF BY-PASS AND DRAIN CONNECTIONS FOR VALVES

1. Scope — Covers the requirements of drain and by-pass connections for valves. This standard is applicable for all valves regardless of pressure or material whenever by-pass or drain connections are required.

2. Location — Locations of openings for drain and by-pass connections shall be as indicated in Fig. 1. Each location is designated by a letter so that the desired location may be specified without using further sketches or descriptions.



GATE VALVE

CHECK VALVE

BALL VALVE

ANGLE VALVE

GLOBE VALVE

Note — The above sketches represent valves with symmetrical shapes. Sketches are illustrative only and do not imply required design.

FIG. 1 LOCATION OF AUXILIARY CONNECTIONS FOR STEEL VALVES

Industrial Valves Sectional Committee, EDC 81 [Ref : Doc : EDC 81 (3413)]

Adopted 31 October 1980

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Gr 2

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2.1 For gate and ball valves the regular practice of attaching by-pass shall be at the side of the main valve with the stems of both the valves pointing upwards.

2.2 For globe valves the regular practice of attaching by-pass shall be on the right side of the main valve (locations *E* and *F* in Fig. 1) with the stems of both the valves parallel pointing vertically upwards.

2.3 The location of by-pass at the bottom of the main valve (*C* and *D* in Fig. 1) with the stem of the by-pass valve at right angles to the main valve stem, can also be furnished and is termed as by-pass at the bottom.

2.4 Any other location or position of the by-pass, valve stem, if desired, shall be by agreement between the manufacturer and the user.

3. Dimensions of Drain and By-pass Connections

3.1 Drain sizes shall be as specified in Table 1. For valves with nominal size (DN) 750 mm and above, the size of drain tapping shall be decided by agreement between the manufacturer and the user.

TABLE 1 DRAIN SIZES

Nominal Valve Size (DN), mm	50 to 100	125 to 200	250 to 600
Size of Tapping (Nominal size) in accordance with IS : 554 - 1975 ' Dimensions for pipe threads where pressure tight joints are required on the threads (*second revision*)'	1/2	3/4	1

3.2 The by-pass sizes shall be as per Table 2 when valves are ordered with by-pass connections.

TABLE 2 BY-PASS SIZES

All dimensions are in millimetres.

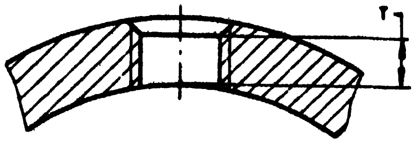
Main Valve Size		100	125	150	200	250	300	350	400	450	500	600	750	900	1 100	1 200
By-Pass Sizes	Series A	15	20	20	20	25	25	25	25	25	25	25	25	25	25	25
	Series B	25	32	32	40	40	50	50	80	80	80	100	100	150	150	200

3.2.1 Series A is recommended for steam service for warning up before the main line is opened, and for balancing pressures where the lines are of limited volume.

3.2.2 Series B is recommended for lines conveying gases or liquids, where by-pass may facilitate the operation of the main valve by balancing the pressure on either side of the closure member.

3.3 *Pipe Thread Tapping* — For drain connections holes may be tapped in the wall of valves if the metal is thick enough to allow effective thread length as specified in Table 3. Where thread length is insufficient or the tapped hole needs reinforcement, a boss shall be added.

TABLE 3 MINIMUM THREAD LENGTH OF TAPPING



Size of tapping as per IS : 554 - 1975	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Length of Thread (mm) (T)	10·5	13·5	14·0	17·5	18·1	18·3	19·4

AMENDMENT NO. 1 MARCH 1999
TO
IS 9625 : 1980 LOCATIONS OF BY-PASS AND DRAIN CONNECTIONS FOR VALVES

(*Page* 2, *clause* 3.2) — Substitute the following for the existing:

'3.2 The recommended by-pass sizes are given in Table 2 when valves are ordered with by-pass connections. However, any other sizes of by-pass required by user shall be based on agreement between manufacturer and user.'

(*Page* 2, *clause* 3.2.1, *line* 1) — Substitute 'warming' *for* 'warning'.

(*Page* 3, *clause* 3.4.2) — Insert the following at the end:

'Where the size of opening is such that reinforcement is necessary, a boss shall be added as given in Table 5.'

(*Page* 3, *Table* 5) — Substitute '38.0' *for* '33.0'.

(HMD 17)

Reprography Unit, BIS, New Delhi, India

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(*Page* 2, *clause* 3.2) — Substitute the following for the existing:

'3.2 The recommended by-pass sizes are given in Table 2 when valves are ordered with by-pass connections. However, any other sizes of by-pass required by user shall be based on agreement between manufacturer and user.'

(*Page* 2, *clause* 3.2.1, *line* 1) — Substitute 'warming' *for* 'warning'.

(*Page* 3, *clause* 3.4.2) — Insert the following at the end:

'Where the size of opening is such that reinforcement is necessary, a boss shall be added as given in Table 5.'

(*Page* 3, *Table* 5) — Substitute '38.0' *for* '33.0'.

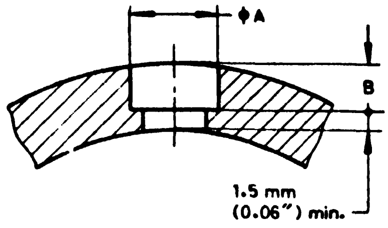
(HMD 17)

Reprography Unit, BIS, New Delhi, India

Welded Connections for By-pass

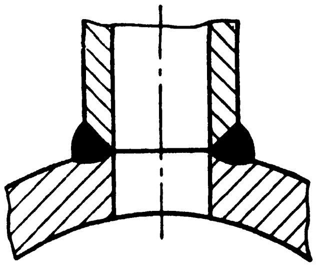
3.4.1 *Sockets* — Size of sockets shall be as specified in Table 4. When the wall thickness is insufficient to provide the above connection directly, a boss shall be added.

TABLE 4 WELDING SOCKET DIMENSIONS



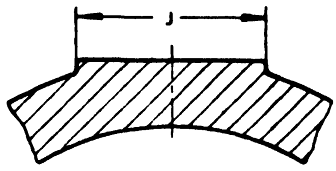
Nominal Pipe Size	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Minimum Diameter of Socket *A* mm	17·5	21·8	27·1	33·8	42·5	48·6	61·2
Minimum Depth of Socket *B* mm	5·0	5·0	6·5	6·5	6·5	6·5	8·0

3.4.2 *Butt welding* — Connections may be attached directly to the wall of the valve by butt welding.



3.4.3 *Bosses* — When provided the diameter of the boss shall not be less than those specified in Table 5 and the height of the boss shall be such as to provide the requisite lengths as given in Tables 3 and 4.

TABLE 5 BOSSES



Nominal Pipe Size	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Diameter of the Boss '*J*', mm	32·0	33·0	44·5	54·0	63·5	70·0	86·0